

**A. AMENDMENTS TO THE CLAIMS**

Please cancel Claims 9, 28, 38 and 45 and amend the claims as indicated hereinafter.

1. (CURRENTLY AMENDED) A method of automating provisioning of network services for customer premises equipment of a subscriber in a next generation digital telecommunications network, the method comprising the steps of:  
receiving a service request from a network service provider that comprises information uniquely identifying the customer premises equipment to be provisioned, and a service to be provided by the customer premises equipment;  
receiving information indicating that access is provisioned for a subscriber associated with the customer premises equipment and that one or more permanent virtual circuits are established in network elements of the network for facilitating the access;  
retrieving a configuration template for a configuration appropriate for the customer premises equipment;  
allocating and reserving at least one resource associated with the customer premises equipment;  
allocating and reserving network addresses for a voice signaling channel and a bearer channel associated with communications between the customer premises equipment and the network;  
updating a domain name service server with information that associates the allocated and reserved network addresses with the customer premises equipment;  
creating and storing one or more mappings for the permanent virtual circuits in a switch device that directs network communications to the customer premises equipment;  
generating configuration data for the customer premises equipment based on the configuration template and stored system configuration information; and  
delivering the configuration data over the network to the customer premises equipment to result in provisioning the customer premises equipment to provide the service.
2. (ORIGINAL) A method as recited in Claim 1, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode

(ATM) network, and wherein the step of generating configuration data includes the step of allocating and reserving an IP address and fully-qualified domain name for each of a plurality of permanent virtual circuits associated with communications among the network and the router.

3. (PREVIOUSLY PRESENTED) A method as recited in Claim 1, wherein the service request comprises information uniquely identifying the customer premises equipment to be provisioned, information identifying one or more permanent virtual circuits assigned by the service provider to the customer premises equipment; and access control data.
4. (ORIGINAL) A method as recited in Claim 1, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the step of delivering the configuration data comprises the steps of storing the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the ADSL router using file transfer protocol.
5. (ORIGINAL) A method as recited in Claim 1, wherein the customer premises equipment is an T1 CPE device, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the step of delivering the configuration data comprises the steps of pre-staging the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the T1 CPE device using telnet.
6. (ORIGINAL) A method as recited in Claim 1, wherein the step of generating configuration data includes the steps of:  
allocating and reserving one or more network addresses respectively associated with one or more communication channels between the network and the customer premises equipment by communicating with a dynamic host control protocol (DHCP) server;  
allocating and reserving one or more fully qualified domain names respectively associated with one or more communication channels between the network and

the customer premises equipment by communicating with a domain name service (DNS) server.

7. (ORIGINAL) A method as recited in Claim 1, further comprising the steps of:  
creating and storing updated configuration data in response to receiving a request to  
update provisioning of the customer premises equipment;  
generating a request to a proxy element of a network access device to update the  
provisioning to the customer premises equipment.
8. (ORIGINAL) A method as recited in Claim 1, further comprising the steps of:  
creating and storing updated configuration data in response to receiving a request to  
update provisioning of the customer premises equipment;  
delivering the updated configuration data to the customer premises equipment;  
applying the updated configuration data as a merge to an existing configuration of the  
customer premises equipment, to result in creating a merged configuration;  
saving the merged configuration as a start-up configuration for the customer premises  
equipment.
9. (CANCELED)
10. (CURRENTLY AMENDED) A method as recited in Claim 1, further comprising the  
steps of:  
retrieving system configuration data from one or more sub-networks that contain the  
customer premises equipment;  
~~allocating network addresses for a signaling channel and a bearer channel associated with~~  
~~the customer premises equipment;~~  
the updating the domain name server includes updating the domain name server ~~updating~~  
~~a DNS server~~ with mappings of the network addresses and corresponding fully-  
qualified domain names.
11. (ORIGINAL) A method as recited in Claim 1, wherein the steps of retrieving a  
configuration template for a configuration appropriate for the customer premises  
equipment include the steps of:

extracting a device type and service type from the service request;  
searching a template registry table for the template based on the device type and service type;  
if a template associated with the device type and service type is not found in the template registry table, selecting and using a default configuration template.

12. (CURRENTLY AMENDED) A computer-readable medium carrying one or more sequences of instructions for automatically provisioning customer premises equipment of a subscriber in a next generation digital telecommunications network to provide a network\_service, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:
- receiving a service request from a network service provider that comprises information uniquely identifying the customer premises equipment to be provisioned, and a service to be provided by the customer premises equipment;
- receiving information indicating that access is provisioned for a subscriber associated with the customer premises equipment and that one or more permanent virtual circuits are established in network elements of the network for facilitating the access;
- retrieving a configuration template for a configuration appropriate for the customer premises equipment;
- allocating and reserving at least one resource associated with the customer premises equipment;
- allocating and reserving network addresses for a voice signaling channel and a bearer channel associated with communications between the customer premises equipment and the network;
- updating a domain name service server with information that associates the allocated and reserved network addresses with the customer premises equipment;
- creating and storing one or more mappings for the permanent virtual circuits in a switch device that directs network communications to the customer premises equipment;
- generating configuration data for the customer premises equipment based on the configuration template and stored system configuration information;

delivering the configuration data over the network to the customer premises equipment to result in provisioning the customer premises equipment to provide the service.

13. (CURRENTLY AMENDED) An apparatus for automatically provisioning customer premises equipment of a subscriber in a next generation digital telecommunications network to provide a network service, comprising:
- means for receiving a service request from a network service provider that comprises information uniquely identifying the customer premises equipment to be provisioned and a service to be provided by the customer premises equipment;
  - means for receiving information indicating that access is provisioned for a subscriber associated with the customer premises equipment and that one or more permanent virtual circuits are established in network elements of the network for facilitating the access;
  - means for retrieving a configuration template for a configuration appropriate for the customer premises equipment;
  - means for allocating and reserving at least one resource associated with the customer premises equipment;
  - means for allocating and reserving network addresses for a voice signaling channel and a bearer channel associated with communications between the customer premises equipment and the network;
  - means for updating a domain name service server with information that associates the allocated and reserved network addresses with the customer premises equipment;
  - means for creating and storing one or more mappings for the permanent virtual circuits in a switch device that directs network communications to the customer premises equipment;
  - means for generating configuration data for the customer premises equipment based on the configuration template and stored system configuration information;
  - means for delivering the configuration data over the network to the customer premises equipment to result in provisioning the customer premises equipment to provide the service.

14. (CURRENTLY AMENDED) An apparatus for automatically provisioning customer premises equipment of a subscriber in a next generation digital telecommunications network to provide a network service, comprising:
- a processor;
  - a network interface communicatively coupled between the processor and the network and configured to communicate data among the processor and the network;
  - a computer-readable medium comprising one or more sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:
    - receiving a service request from a network service provider that comprises information uniquely identifying the customer premises equipment to be provisioned and a service to be provided by the customer premises equipment;
    - receiving information indicating that access is provisioned for a subscriber associated with the customer premises equipment and that one or more permanent virtual circuits are established in network elements of the network for facilitating the access;
    - retrieving a configuration template for a configuration appropriate for the customer premises equipment;
    - allocating and reserving at least one resource associated with the customer premises equipment;
    - allocating and reserving network addresses for a voice signaling channel and a bearer channel associated with communications between the customer premises equipment and the network;
    - updating a domain name service server with information that associates the allocated and reserved network addresses with the customer premises equipment;
    - creating and storing one or more mappings for the permanent virtual circuits in a switch device that directs network communications to the customer premises equipment;
    - generating configuration data for the customer premises equipment based on the configuration template and stored system configuration information;

delivering the configuration data over the network to the customer premises equipment to result in provisioning the customer premises equipment to provide the service.

15. (CURRENTLY AMENDED) An apparatus for automatically provisioning customer premises equipment of a subscriber in a next generation digital telecommunications network to provide a network service, comprising:
- a provisioning engine configured to receive a service request from a network service provider that comprises information uniquely identifying the customer premises equipment to be provisioned, and a service to be provided by the customer premises equipment;
  - a configuration template manager communicatively coupled to the provisioning engine and configured to retrieve a configuration template for a configuration appropriate for the customer premises equipment;
  - means in the provisioning engine for allocating and reserving at least one resource associated with the customer premises equipment and for generating configuration data for the customer premises equipment based on the configuration template and stored system configuration information;
- wherein the means in the provisioning engine for allocating and reserving at least one resource associated with the customer premises equipment and for generating configuration data for the customer premises equipment based on the configuration template and stored system configuration information includes means for:
- receiving information indicating that access is provisioned for a subscriber associated with the customer premises equipment and that one or more permanent virtual circuits are established in network elements of the network for facilitating the access;
  - allocating and reserving network addresses for a voice signaling channel and a bearer channel associated with communications between the customer premises equipment and the network;

updating a domain name service server with information that associates the  
allocated and reserved network addresses with the customer premises  
equipment;

creating and storing one or more mappings for the permanent virtual circuits in a  
switch device that directs network communications to the customer  
premises equipment; and

a configuration delivery manager communicatively coupled to the provisioning engine  
and configured to deliver the configuration data over the network to the customer  
premises equipment to result in provisioning the customer premises equipment to  
provide the service.

16. (ORIGINAL) An apparatus as recited in Claim 15, further comprising a resource manager that is communicatively coupled to the provisioning engine and communicatively coupled to a dynamic host control protocol (DHCP) server and a domain name service (DNS) server, wherein the resource manager is configured to request and receive one or more network addresses from the DHCP server and to request and receive one or more fully-qualified domain names from the DNS server.
17. (ORIGINAL) An apparatus as recited in Claim 15, further comprising an inventory manager that is communicatively coupled to the provisioning engine a to an inventory repository that comprises network element inventory information, and wherein the means for generating configuration data includes means for generating the configuration data based on the network element inventory information.
18. (ORIGINAL) An apparatus as recited in Claim 15, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein means for generating configuration data includes means for allocating and reserving an IP address and fully-qualified domain name for each of a plurality of permanent virtual circuits associated with communications among the network and the router.
19. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 15, wherein the service request comprises information uniquely identifying the customer premises



equipment to be provisioned, information identifying one or more permanent virtual circuits assigned by the service provider to the customer premises equipment; and access control data.

20. (ORIGINAL) An apparatus as recited in Claim 15, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein means for delivering the configuration data comprises means for storing the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the ADSL router using file transfer protocol.
21. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the generating configuration data includes allocating and reserving an IP address and fully-qualified domain name for each of a plurality of permanent virtual circuits associated with communications among the network and the router.
22. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, wherein the service request comprises information uniquely identifying the customer premises equipment to be provisioned, information identifying one or more permanent virtual circuits assigned by the service provider to the customer premises equipment and access control data.
23. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the delivering the configuration data includes storing the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the ADSL router using file transfer protocol.
24. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, wherein the customer premises equipment is an T1 CPE device, wherein the network is

an asynchronous transfer mode (ATM) network, and wherein the delivering the configuration data includes pre-staging the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the T1 CPE device using telnet.

25. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, wherein the generating configuration data includes:  
allocating and reserving one or more network addresses respectively associated with one or more communication channels between the network and the customer premises equipment by communicating with a dynamic host control protocol (DHCP) server;  
allocating and reserving one or more fully qualified domain names respectively associated with one or more communication channels between the network and the customer premises equipment by communicating with a domain name service (DNS) server.
26. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, further comprising:  
creating and storing updated configuration data in response to receiving a request to update provisioning of the customer premises equipment;  
generating a request to a proxy element of a network access device to update the provisioning to the customer premises equipment.
27. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, further comprising:  
creating and storing updated configuration data in response to receiving a request to update provisioning of the customer premises equipment;  
delivering the updated configuration data to the customer premises equipment;  
applying the updated configuration data as a merge to an existing configuration of the customer premises equipment, to result in creating a merged configuration;  
saving the merged configuration as a start-up configuration for the customer premises equipment.

28. (CANCELED)
29. (CURRENTLY AMENDED) A computer-readable medium as recited in Claim 12, further comprising:  
retrieving system configuration data from one or more sub-networks that contain the  
customer premises equipment;  
~~allocating network addresses for a signaling channel and a bearer channel associated with~~  
~~the customer premises equipment;~~  
the updating the domain name server includes updating the domain name server updating  
~~a DNS server~~ with mappings of the network addresses and corresponding fully-qualified domain names.
30. (PREVIOUSLY PRESENTED) A computer-readable medium as recited in Claim 12, wherein the retrieving a configuration template for a configuration appropriate for the customer premises equipment includes:  
extracting a device type and service type from the service request;  
searching a template registry table for the template based on the device type and service type;  
if a template associated with the device type and service type is not found in the template registry table, selecting and using a default configuration template.
31. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the means for generating configuration data includes means for allocating and reserving an IP address and fully-qualified domain name for each of a plurality of permanent virtual circuits associated with communications among the network and the router.
32. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, wherein the service request comprises information uniquely identifying the customer premises equipment to be provisioned, information identifying one or more permanent virtual circuits assigned by the service provider to the customer premises equipment and access control data.

33. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the means for delivering the configuration data includes means for storing the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the ADSL router using file transfer protocol.
34. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, wherein the customer premises equipment is an T1 CPE device, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the means for delivering the configuration data includes means for pre-staging the configuration data in a file server that is communicatively coupled to the network and delivering the configuration data from the file server to the T1 CPE device using telnet.
35. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, wherein the means for generating configuration data includes:  
means for allocating and reserving one or more network addresses respectively associated with one or more communication channels between the network and the customer premises equipment by communicating with a dynamic host control protocol (DHCP) server;  
means for allocating and reserving one or more fully qualified domain names respectively associated with one or more communication channels between the network and the customer premises equipment by communicating with a domain name service (DNS) server.
36. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, further comprising:  
means for creating and storing updated configuration data in response to receiving a request to update provisioning of the customer premises equipment;  
means for generating a request to a proxy element of a network access device to update the provisioning to the customer premises equipment.

37. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, further comprising:  
means for creating and storing updated configuration data in response to receiving a request to update provisioning of the customer premises equipment;  
means for delivering the updated configuration data to the customer premises equipment;  
means for applying the updated configuration data as a merge to an existing configuration of the customer premises equipment, to result in creating a merged configuration;  
means for saving the merged configuration as a start-up configuration for the customer premises equipment.
38. (CANCELED)
39. (CURRENTLY AMENDED) An apparatus as recited in Claim 13, further comprising:  
means for retrieving system configuration data from one or more sub-networks that contain the customer premises equipment;  
~~means for allocating network addresses for a signaling channel and a bearer channel associated with the customer premises equipment;~~  
means for updating the domain name server ~~updating a DNS server~~ with mappings of the network addresses and corresponding fully-qualified domain names.
40. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 13, wherein the means for retrieving a configuration template for a configuration appropriate for the customer premises equipment includes:  
means for extracting a device type and service type from the service request;  
means for searching a template registry table for the template based on the device type and service type;  
means for if a template associated with the device type and service type is not found in the template registry table, selecting and using a default configuration template.
41. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 15, wherein the customer premises equipment is an ADSL router, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the configuration delivery manager is further configured to cause the configuration data to be stored in a file server

that is communicatively coupled to the network and delivered from the file server to the ADSL router using file transfer protocol.

42. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 15, wherein the customer premises equipment is an T1 CPE device, wherein the network is an asynchronous transfer mode (ATM) network, and wherein the configuration delivery manager is further configured to cause the configuration data to be pre-staged in a file server that is communicatively coupled to the network and delivered from the file server to the T1 CPE device using telnet.
43. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 15, wherein the provisioning engine is further configured to:  
create and store updated configuration data in response to receiving a request to update provisioning of the customer premises equipment; and  
generate a request to a proxy element of a network access device to update the provisioning to the customer premises equipment.
44. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 15, wherein the provisioning engine is further configured to:  
create and store updated configuration data in response to receiving a request to update provisioning of the customer premises equipment;  
deliver the updated configuration data to the customer premises equipment;  
apply the updated configuration data as a merge to an existing configuration of the customer premises equipment, to result in creating a merged configuration; and  
save the merged configuration as a start-up configuration for the customer premises equipment.
45. (CANCELED)
46. (CURRENTLY AMENDED) An apparatus as recited in Claim 15, further comprising means for:  
retrieving system configuration data from one or more sub-networks that contain the customer premises equipment;

~~allocating network addresses for a signaling channel and a bearer channel associated with the customer premises equipment;~~  
~~means for updating the domain name server~~ ~~updating a DNS server~~ with mappings of the network addresses and corresponding fully-qualified domain names.

47. (PREVIOUSLY PRESENTED) An apparatus as recited in Claim 15, wherein the configuration template manager is further configured to:  
extract a device type and service type from the service request;  
search a template registry table for the template based on the device type and service type; and  
if a template associated with the device type and service type is not found in the template registry table, selecting and using a default configuration template.